



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/780,984	02/09/2001	Kurt E. Spears	10011155-1	2245

7590 06/10/2005

HEWLETT-PACKARD COMPANY
Intellectual Property Administration
P.O. Box 272400
Fort Collins, CO 80527-2400

EXAMINER

PHAM, THIERRY L

ART UNIT	PAPER NUMBER
----------	--------------

2624

DATE MAILED: 06/10/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No. 09/780,984	Applicant(s) SPEARS ET AL.	
	Examiner Thierry L. Pham	Art Unit 2624	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 17 February 2005.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-36 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-36 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

- This action is responsive to the following communication: an Amendment filed on 2/17/05.
- Claims 1-36 are pending in application.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 1-36 are rejected under 35 U.S.C. 103(a) as being unpatentable over Maeshima et al (US 4985760), and in view of Nishiura et al (US 4634883).

Regarding claim 1, Maeshima discloses a multiple resolution sensing apparatus comprising (image sensor (scanner) with multiple sensing areas, fig. 8-9):

- a plurality of first photosensor elements (R and G line sensors, fig. 9) coupled together to form a first linear array and having a first length (10um X 10um, fig. 9b) and a first resolution;
- a plurality of second photosensor elements (B line sensors, fig. 9) coupled together to form a second linear array and having a second length (20um X 10um, fig. 9b) and a second resolution (line sensors B and line sensors R, G have different resolutions due to sensor size, fig. 9);
- a coupler (wires connecting line sensors RGB, fig. 20) having an output, said coupler coupled to said first linear array and to said second linear array; and
- a controller (CCD driving control circuit for controlling line sensors RGB, fig. 29, col. 11, lines 40-65) coupled to said coupler and providing a control signal to said coupler such that said output is coupled to said first linear array when said first resolution is employed and such that said output is coupled to said second linear array when said second resolution is employed.

However, Maeshima fails to teach and/or suggest a controller for selectively selecting different array of photosensor, for example, a controller for selecting second photosensor array instead of first linear array as cited in claim 1.

Nishiura, in the same field of endeavor for image sensor, teaches a controller for selectively selecting different array of photosensor, for example, a controller for selecting second photosensor array instead of first linear array (control circuit 52 of fig. 5 for selectively selecting different photosensor arrays for scanning, col. 3, lines 55-67).

It would have been obvious to one of ordinary skill in the art at the time of the invention was made by modifying image reading sensor of Maeshima to include a controller for selectively selecting different array of photosensors for scanning as taught by Nishiura because of a following reason: (●) different photosensors arrays can be selected if one of the selected arrays for scanning has been faulted/failed (col. 4, lines 45-60 of Nishiura); (●) using selected number of photosensors for each scanning (i.e. selecting only certain number of photosensors for scanning) rather than all the photosensors incorporated within an image sensor device increases the life of an image reading sensor as a whole.

Therefore, it would have been obvious to combine Maeshima with Nishiura to obtain the invention as specified in claim 1.

Regarding claims 2-3, Maeshima further discloses the apparatus of claim 1, wherein said first linear array and said second linear array are placed on a single substrate (CCD chip 2, fig. 9).

Regarding claim 4, Maeshima further discloses the apparatus of claim 2, wherein said coupler further includes at least one amplifier (amplifiers 204-206, fig. 21), and wherein said first linear array, said second linear array and said coupler with said at least one amplifier are placed on a single substrate (CCD chip 2, fig. 9).

Regarding claim 5, Maeshima further discloses the apparatus of claim 2, wherein said first length and said second length (i.e. 10um, fig. 9b) are substantially the same and at least equal to one dimension of an image to be sensed.

Regarding claim 6, Maeshima and Nishiura further discloses the apparatus of claim 1, wherein said coupler further comprises a switch (fig. 22 of Maeshima and also see switches 40

Art Unit: 2624

fig. 5 of Nishiura) controlled by said controller such that said switch couples said output to said first linear array when said first resolution is employed and such that said switch couples said output to said second linear array when said second resolution is employed.

Regarding claim 7, Maeshima further discloses the apparatus of claim 6, wherein said coupler further comprises: a first amplifier (fig. 18) coupled between said switch and said first linear array such that charges detected by said plurality of first photosensor elements are amplified into a first electrical signal; and a second amplifier coupled between said switch and said second linear array such that charges detected by said plurality of second photosensor elements are amplified into a second electrical signal (fig. 15).

Regarding claim 8, Maeshima further discloses the apparatus of claim 1, wherein said first linear array and said second linear array detect a first color of light (RBG, figs. 10-15).

Regarding claims 9-17, the applicants recite the limitations that are similar and in the same scope of invention as to those in claims 1-8 above; therefore, claims 9-17 are rejected for the same rejection rationale/basis as described in claims 1-8. For ease of implication, Maeshima discloses a single CCD chip instead of multiple CCD chips within an image scanner. Inherently, image scanner incorporates a plurality of CCD Chips (ref. # 2, fig. 9). Please notes: either R and/or G line sensors can represent third linear array since the applicants do not specify what is a "third length and a third resolution". Herein, the examiner interprets third length and third resolution is equal to a first length and first resolution. Clearly, fig. 9a (Maeshima) shows R and G line sensor having both the same length and resolution.

Regarding claims 18-19, Maeshima further discloses the apparatus of claim 13, wherein said first resolution corresponds to said first linear array having substantially 300 (line array of sensors could be any number of elements, abstract and col. 5, lines 30-65 and col. 6, lines 8-55) of said first photosensitive elements, wherein said second resolution corresponds to said second linear array having substantially 600 (twice as much as first line array sensors, col. 6, lines 25-34) of said second photosensitive elements, and wherein said third resolution corresponds to said

Art Unit: 2624

third linear array having substantially 2400 of said third photosensitive elements, wherein said third linear array is comprised of two rows, each row having substantially 1200 (fig. 9) of said third photosensitive elements.

Regarding claims 20-36, the applicants recite the limitations that are similar and in the same scope of invention as to those in claims 1-19 above; therefore, claims 20-36 are rejected for the same rejection rationale/basis as described in claims 1-19.

Response to Arguments

Applicant's arguments, see pages 11-15, filed 2/17/05, with respect to the rejection(s) of claim(s) 1-36 under 102(b) have been fully considered and are persuasive. Therefore, the rejection has been withdrawn. However, upon further consideration, a new ground(s) of rejection is made in view of newly found prior art reference (US 4634883) due to newly added limitation "instead of first linear array" as cited in claims 1, 20, and 33.

Conclusion

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

- U.S. 4870483 to Nishigaki, teaches an example of image scanner comprising a plurality of image sensor arrays (CCD chips).
- U.S. 5773814 to Phillips, teaches an example of image scanner comprising a plurality of image sensor arrays and a method of arranging such arrays.
- U.S. 5055921 to Usui, teaches image line sensors with different sensing areas (fig. 7+).
- U.S. 6765691 to Kubo et al, teaches a scan setting attributes (i.e. user interface) that allow users to scan document/image with different resolution, and inherently it includes a controller for selecting a different photosensor arrays to scan images with respect to different resolution.

Art Unit: 2624

Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

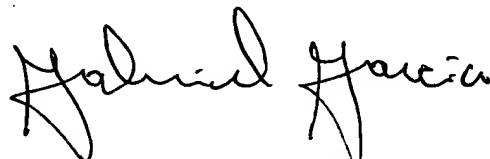
A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Thierry L. Pham whose telephone number is (571) 2727439. The examiner can normally be reached on M-F (9:30 AM - 6:00 PM).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, David K. Moore can be reached on (571)272-7437. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Thierry L. Pham



GABRIEL GARCIA
PRIMARY EXAMINER